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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,522	02/15/2002	Yong Ma	270/205	3498

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EXAMINER

JACKSON, CORNELIUS H

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/077,522

Applicant(s)

MA, YONG

Examiner

Cornelius H. Jackson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Paul IP*

PAUL IP  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-8 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 2 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: how the first and second waveguides are coupled to the resonator, since the claims fail to specify an origin to which vertical or horizontal can be viewed. Claims 3-6 and 8 are rejected for depending on an indefinite base claim.

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***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 7, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Grubb et al. (6344925). Grubb et al. disclose a wavelength tunable laser **Fig. 6a** comprising a laser diode **47** and a wavelength selective external cavity **52** optically coupled to the laser diode **47**, the external cavity including a resonator **48**, first **50<sub>i3-4</sub>** and second **50<sub>o3-4</sub>** waveguides optically coupled to the resonator **48**, and a reflector **54<sub>H</sub>** optically coupled to the second waveguide **50<sub>o4</sub>**, **see col. 3, lines 23-26, col. 4, line 61-col. 5, line 15, col. 6, lines 27-35 and col. 7, line 50-col. 8, line 2.**

Regarding claims 2, 7, 19 and 20, Grubb et al. disclose all the stated limitations, **see Fig. 6a, col. 3, lines 23-26, col. 4, line 61-col. 5, line 15, col. 6, lines 27-35 and col. 7, line 50-col. 8, line 2.**

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 8 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb et al. (6344925) in view of Ho (6009115). Grubb et al., as applied to claims 1, 2 and 7 above, teach all the stated limitations, except for the first **50<sub>i3-4</sub>** and second **50<sub>o3-4</sub>** waveguides and the resonator **48** are formed on a single substrate comprising a plurality of layers. Ho teaches the first **14** and second **16** waveguides and the resonator **12** are formed on a single substrate comprising a plurality of layers, **see col. 4, line 62- col. 5, line 25 and col. 10, line 47- col. 11, line 7**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to place all the elements of the wavelength tunable laser on a single substrate to keep the arrangement constant, to form an on-chip integration with other semiconductor devices and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 4 and 8, Ho teaches a separation layer, **see col.4, lines 28-41**.

Regarding claims 5 and 6, Ho teaches how the waveguides are formed, **see col. 8, line 33-col. 9, line 25**. Also, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 9, Ho teaches the resonator comprises a plurality of resonators, **see Fig. 9**.

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Regarding claim 10, Ho teaches the position of the lens, **see Fig. 10 and col. 6, lines 54-60.**

Regarding claim 11, Grubb et al. teach the all stated limitations, **see Fig. 6a.**

Regarding claim 12, Grubb et al. and Ho teach all the stated limitations, **see rejection to claim 3 above.**

Regarding claim 13, Grubb et al. teach the all stated limitations, **see col. 8, lines 15-21.**

Regarding claim 14, Ho teaches all the stated limitations, **see rejection to claim 10 above.**

Regarding claim 15, It would have been an obvious matter of design choice to place a reflective coating a the end facet of the waveguide, since applicant has not disclosed that the coating solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a reflective mirror.

Regarding claims 16 and 17, Ho teaches all the stated limitations, **see col. 9, lines 34-52.**

Regarding claim 18, Grubb et al. teach the all stated limitations, **see col. 8, lines 35-48.**

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Little et al. (6052495), Bernard et al. (5004342), Po (4852117)

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and Hicks, Jr. (4720160) all disclose inventions similar to that of Applicant's claimed invention.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (703) 306-5981. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



chj  
March 24, 2003



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